

What is claimed is:

- 1       A room-bounding structure comprising:  
a rigid sheet, which is substantially impermeable to moisture; and  
a spacer protrusion extending from a first surface of the rigid sheet, the protrusion  
5 being rigidly formed from the rigid sheet,  
wherein contact between the spacer protrusion and a rigid surface sheet forms an air channel  
on the first surface side of the rigid sheet for ventilating air through the structure.
- 2       A structure according to claim 1 further comprising a plurality of spacer protrusions  
10 distributed over the area of the rigid sheet.
- 3       A structure according to claim 1 further comprising:  
a distribution duct with at least one opening for introducing ventilating air to the  
structure.  
15
- 4       A structure according to claim 3, wherein the distribution duct introduces ventilating  
air from a dry interior space of a building.
- 5       A structure according to claim 3, wherein the distribution duct includes a plurality of  
20 openings with progressively changing sizes configured to minimize dead space in the air  
channel.
- 6       A structure according to claim 3, wherein the distribution duct includes a plurality of  
openings, the openings ordered to be progressively closer to one another to minimize dead  
25 space in the air channel.
- 7       A structure according to claim 3 further comprising:  
a collection duct with at least one opening for removing ventilating air from the  
structure,  
30 wherein the distribution duct is located at an edge of the structure and the collection duct is  
located at an edge of the structure opposite from the distribution duct.

8        A structure according to claim 7, wherein the structure is at least part of a wall structure, and the distribution duct is arranged in a lower part of the wall structure and the collector duct is arranged in an upper part of the wall structure.

5

9        A structure according to claim 7, wherein the structure is part of a wall structure, and the distribution duct is arranged in an upper part of the wall structure and the collector duct is arranged in a lower part of the wall structure.

10      10       A structure according to claim 1 further comprising:  
             a collector duct with at least one opening for removing ventilating air from the structure.

11       A structure according to claim 10, wherein the collector duct removes ventilating air  
15      from the structure to a mechanical air extractor.

12       A structure according to claim 11, wherein the collector duct removes ventilating air from the structure to a mechanical air extractor that also ventilates air from a bathroom.

20      13       A structure according to claim 10, wherein the collection duct includes a plurality of openings with progressively changing sizes configured to minimize dead space in the air channel.

14       A structure according to claim 10, wherein the collection duct includes a plurality of  
25      openings, the openings ordered to be progressively closer to one another to minimize dead space in the air channel.

15       A structure according to claim 1, wherein the spacer protrusion is in contact with mineral board.

30

16. A structure according to claim 1, wherein the spacer protrusion is in contact with a coated steel plate.
- 17 A structure according to claim 1, wherein the structure includes a wall and at least one of a floor and ceiling.
- 18 A structure according to claim 1 further comprising:  
a spacer protrusion on a second surface of the rigid sheet,  
wherein contact between the spacer protrusion and another rigid surface sheet forms an air channel on the second surface side of the rigid sheet.
- 19 A structure according to claim 18, wherein the spacer protrusion on the second surface is rigidly formed from the rigid sheet.
- 20 A structure according to claim 18, wherein the spacer protrusion on the second surface is an edge flange bent into the edge of the another rigid surface sheet.
- 21 A structure according to claim 18 further comprising a plurality of spacer protrusions on the second surface distributed over the area of the rigid sheet.
- 22 A structure according to claim 18, wherein the spacer protrusion on the second surface is in contact with mineral board.
- 23 A structure according to claim 18, wherein the spacer protrusion on the second surface is in contact with a sheet that is at least part organic building board.
- 24 A structure according to claim 18, wherein the spacer protrusion on the second surface is in contact with a coated steel plate.
- 25 A structure according claim 1 further comprising:

an attachment flange connected to an edge of the rigid sheet, and configured to attach to an adjacent structure to form a rigid unified structure.

26 A structure according to claim 1 further comprising:  
5 a sensor capable of providing a measure of the moisture content of the ventilating air.

27 A modular room for a building comprising:  
a prefabricated room including a ceiling; a floor; and walls supporting the roof and floor, wherein the room is prefabricated remotely from a location of the building that  
10 includes the room, and the room is capable of being modularly connected to the building at the location of the building; and  
a utility connection capable of connecting a utility system of the room to a corresponding utility system of the building.

15 28 A modular room according to claim 27, wherein the utility connection is used for a plumbing system.

29 A modular room according to claim 27, wherein the utility connection is used for an electrical system.

20

30 A modular room according to claim 27, wherein the utility connection is used for a HVAC system.

31 A modular room according to claim 27, wherein the utility connection is linked  
25 directly to the utility system of an adjacent room.

32 A modular room according to claim 27 further comprising a room-bounding structure according to claim 1.

30 33 A modular room according to claim 27, wherein the room is sealed upon fabrication and unsealed only after the room is modularly connected to the building.

34. A structural system for forming at least part of a room-bounding structure, the system comprising:
- a casted structure; and
  - 5 a perforated conduit for flowing a gas therethrough, the gas entering the perforated conduit through an inlet and exiting the perforated conduit through an outlet, the inlet and outlet being positioned outside the casted structure;
- wherein, at least a portion of the perforated conduit is embedded in the casted structure.
- 10 35. A structural system according to claim 34, wherein the casted structure includes casted concrete.
36. A structural system according to claim 34, wherein the perforated conduit includes a plastic pipe.
- 15 37. A structural system according to claim 34, wherein the room-bounding structure is at least one of a wall, a floor, and a ceiling.
38. A structural system according to claim 34, wherein the portion of the perforated
- 20 conduit embedded in the casted structure includes an exterior wall of the perforated conduit exposed outside the casted structure.
39. A structural system according to claim 34, wherein the portion of the perforated conduit embedded in the casted structure is entirely embedded in the casted structure.
- 25 40. A structural system according to claim 34, wherein the perforated conduit has a higher number density of perforations per external surface area of conduit surface in at least one section of the conduit embedded in the casted structure than in another section of the conduit embedded in the casted structure, the at least one section of conduit configured to be
- 30 more exposed to water than the another the another section of the conduit.

41. A structural system according to claim 34, wherein the perforated conduit has at least one larger perforation in at least one section of the conduit embedded in the casted structure than in another section of the conduit embedded in the casted structure, the at least one section of conduit configured to be more exposed to water than the another the another  
5 section of the conduit.

42. A structural system according to claim 34, wherein the outlet is connected to a ventilation duct.

10 43. A structural system according to claim 34, wherein the outlet is connected to a fan.

44. A structural system according to claim 34, wherein the inlet is connected to a fan.

45. A structural system according to claim 34, wherein the perforated conduit is  
15 embedded in at least one section of the casted structure configured to be proximate to a water source.

46. A structural system according to claim 34 further comprising a sensor located after the outlet for providing a measure of moisture content of the gas flowing through the outlet.  
20

02802/00101 304148.1

25